

Chairman's Introduction

Allt Mhuic, Loch Arkaig, Nature Reserve
Reserve Official Opening
Monday 2nd June 2003

The biggest event in the history of our branch was the opening of the first-ever Scottish reserve at Allt Mhuic, Loch Arkaig. It took place on Monday 2 June 2003 when dignitaries, guests, BC employees and Branch members all turned out to the Moorings Hotel, Banavie, nr Fort William to listen to, introductions and plans for the reserve. Our guest speaker was Allan Wilson MSP, (Deputy Minister for Environment and Rural Development, Scottish Executive) who gave us an interesting talk and just as importantly listened carefully to comments during conversation later at the buffet.

In the early afternoon we boarded the minibus for the tortuous trip up the twisting switchback to our reserve for the official opening where Alan Wilson did the honours with style, cut the ribbon, and declared the reserve open. Lots of photographs were taken and we did indeed see a Chequered Skipper before we took a short tour of the reserve.

As we returned to the Moorings my mind turned to the reasons for creating this reserve. It seemed strange that we did not have one sooner but when I thought about it Butterfly Conservation is a young organisation with its genesis in the south and a gradual increase of membership northwards over the years. In light of this it is not too surprising that reserves were first created in the south and are only now appearing in Highland. The inspiration for a reserve is down to the foresight of David Whitaker who persuaded all the right people to "go for it". A great many other people have played their part in the process of getting this reserve off the ground and it would be impossible to mention them all but David stands out from all the rest as prime mover. We owe it all to him as the idea was his and without his enthusiasm the whole scheme would never have come to fruition.

I was rather pleased to be able to play my small part in helping set up the reserve as Chequered Skippers have had a raw deal in England and became extinct there in the 1970s. As a result we in Scotland are charged with ensuring that the remaining population do not go the way of their English cousins. The purpose of the reserve is two fold, firstly to protect this fine site, it's butterflies and habitat and secondly to monitor the reserve and the two adjacent blocks of commercial timber plantation over a number of years to ascertain what effects various timber operations have on the Skipper population. It is hoped that as the cycle of timber felling and regeneration progress the butterflies will move out from the presently occupied areas to colonise the clear felled ones and in succeeding years move around to the most favourable habitats. Research will be ongoing over the foreseeable future with Butterfly Conservation naturally playing a key role. I would like to thank all concerned for such a well organised event and for the good turn out on the day and let's hope the butterflies continue to thrive so we can more fully understand their requirements and be even more helpful to them in the future.

Jimmy McKellar



Loch Arkaig, Nature Reserve

Editorial comment

Chairmen come and go but I seem to have been here forever. Unlike a lot of people who are in top positions for some time I have not become disheartened or bored nor any of these unwelcome adjectives. I have however decided it is time for a change, a change to the content of our newsletter. I have not gone mad and hired the services of a professional editor but simply wish to give variety and what I hope is a better product. One which gives you, the member, a feel for what is on offer, more news snippets and hopefully encourage you all to take an active part in our branch.

The reasons for this change are several: For a start I was rather busy this year and felt I did not have time to do justice to articles during the summer months when I would normally expect to get the bulk of the exercise done. This coupled with a very heavy commitment to another voluntary organization left me in a blur with no time to think let alone act. All good things come to an end, as the saying goes and so it was that my organization and I parted company. Now I have lots more time to give to our branch and Newsletter. The other benefit of having left the writing of our newsletter so late is that I have had to delegate much of it to others (Oh joy, I hear you say). Previous issues have tended to have rather a lot written by myself. Lets hope the people I have encouraged to write an article come up with the goods or this just might be one of the shortest Newsletters ever.

Pictures in the last issue did no favours to the originals but we hope we have cracked the technical problem which caused the poor reproduction. Only time will tell and of course by the time I see the pictures in this issue it will be too late. Anyone want to be editor?

Jimmy McKellar



Larva identification day

Twenty-five years, and still counting...

I was first introduced to butterfly transect counts in 1978, two years after Ernie Pollard at Monks Wood set up the national scheme. The concept seemed ludicrous to me at the time. Butterflies are such capricious, unpredictable insects, so strongly influenced by temperature, sunshine, wind and nectar sources. How could it be possible to monitor them accurately just by walking along a set route once a week from April to September? Would the data be reliable, would the results actually mean anything? I was very sceptical!

However, I was also in awe of the person asking me to take part. This was Richard, son of Henry Williamson of Tarka the Otter fame. As warden of Kingley Vale, a National Nature Reserve in Sussex, Richard was already doing a transect there. Now he wanted me to do one at Castle Hill. This was an area I knew well, having hunted butterflies on its downland slopes in my misspent youth - before it was designated a reserve and before I gave up collecting. Certainly it was an excellent site. Flattered to have been chosen, I agreed to do the counts for an initial year in spite of my misgivings.

My first task was to set out the transect route. I did this in March, before any butterflies were on the wing to sway my judgment. This

helped to make the route a fair reflection of the different habitats on the reserve, taking in scrubby bits, former arable fields and less-favoured hillsides as well as prime, south-facing chalk grassland. My transect was roughly 3km long, divided into 12 different sections. Only butterflies seen within two metres either side of the set route qualified for inclusion.

The first counts were relatively easy and enjoyable. After the post-hibernation Peacocks and Small Tortoiseshells came Dingy Skipper, Small Heath, Small Copper, Common Blue and – the speciality of the reserve – Adonis Blue. Fresh males were an unmistakably pure shade of blue, making Common Blues look dull in comparison. Separating females glimpsed only in flight was trickier, with the added complication of the occasional Brown Argus and Small Blue. My identification skills improved rapidly – they had to!

Counts were now taking longer to complete. The level of concentration required was enormous, due to the sheer numbers and variety of butterflies. By early August, skippers and browns were at their peak and the Chalkhill Blues were out. I was almost ready to give up. It was impossible! There were simply too many butterflies to count. Hot, flustered and frustrated, I stopped in the middle of the best section, surrounded by a kaleidoscope of flickering wings, and tried to regain my composure.

Sheer stubbornness took over. It could be done, though it needed a slight change of method. Speaking into a portable tape recorder would be quicker than fumbling with pencil and paper, with no need to stop or take my eyes off the butterflies. And I would walk the most densely populated sections twice, counting only the blues on the first pass and the rest of the species on the second. That would reduce the task to more manageable proportions. Even then, there were too many Chalkhill Blues and Meadow Browns to count individually. Well, birders have similar

problems, so I'd borrow their technique. I started counting Chalkhills in tens, and estimating Meadow Browns as flocks, 30 or 40 at a time. Sorry if this sounds far-fetched, but in good summers the numbers of butterflies on prime downland are almost incredible. At the height of the season it was not unusual to record over a thousand butterflies of up to 20 different species on my 3km transect.

Somehow I got through the first year. By now I was a convert. The method really did work! Several times I'd tried tested it for myself, trying to catch it out, by doing counts on consecutive days in slightly different weather conditions, though still within the stipulated limits. The agreement between these duplicated counts was remarkable: even the section counts tallied better than I'd thought possible. And the graphs or histograms plotted from the year's results looked convincing: species emerged and reached a peak, then tailed off before repeating the process with a second brood if they had one. Few or no anomalous counts disrupted the expected curves.

Initially I'd taken on the transect for one year only. Now I was hooked, and keen to continue. The weekly count was a huge commitment, especially when the weather was unfavourable. Many times I had to drop everything and dash along to Castle Hill to take advantage of a brief window of sunshine, rather than risk missing a week. Sometimes-inevitably - by the time I got there it was raining again!

Overall, the effort was worth it. Every year was different, every year brought something of interest. Species waxed and waned, emerged early or late. Colonies shifted their ground. This was influenced by the weather and also by the management. Contrary to expectations, heavy summer grazing by sheep did not help the Adonis Blue, or any other species. The sheep ate everything, especially the foodplants. Yet insufficient grazing was even worse, for if the turf became long and

rank the foodplants were shaded out. The information from my transect counts was proving genuinely useful, a valuable management tool.

In the end, I did 12 consecutive years of transects at Castle Hill. Some of the memories will remain with me forever: the population explosion of Adonis Blue in June 1984, when I recorded 224 on one count (compared with just a single first-brood male in 1979). Marbled Whites like miniature chessboards, clustered on purple knapweed. Or 18th June 1983, with Clouded Yellows streaming up the coomb straight from the sea; that year I logged 31 in total.

It was a wrench, coupled only slightly with relief, to give up the Castle Hill transect when we moved to Banffshire at the end of 1989. Summer 1990 seemed incomplete without my weekly butterfly walk. There was much promising habitat on my doorstep, but officially the national scheme was now closed to new sites. I mentioned my withdrawal pangs in a Christmas card to Ernie Pollard and received an immediate response: Scotland was under-represented, so a new transect here would be most welcome. I was back in business!

My thirteenth season at Culvie Wood, and 25th in all, has just ended. It has been a fine summer and I have not missed a single one of the 26 counts, a rare event. It helps that my transect begins literally on the doorstep, so I can take advantage of even one hour of suitable conditions in any week. That doesn't sound much to ask, but in a cold late Scottish spring the April counts are often missed. Not that it really matters, as there are no butterflies out anyway. Some years it is hard to find a suitable day even in midsummer. Worst is when a big black cloud parks itself permanently over my transect, yet the countryside all around is bathed in sunshine. Conversely, there have been days when a moving gap in the blanket of cloud has miraculously allowed the sun to accompany

me along the route, as if by divine intervention.

Needless to say, there are far fewer butterflies on my present transect. At Castle Hill I recorded 28 species, at Culvie Wood only 16. (It should have been 17, but the Peacock that spent three days on my buddleia last September was nowhere to be seen during the actual count.) As for numbers, I'm never forced to count any species in tens. My best week's count at Castle Hill was 1,746 butterflies, which included 1,061 Chalkhill Blues. My best count at Culvie Wood was 170 on 28th May 2001 – 166 Green-veined Whites and 4 Orange-tips. The best annual total at Castle Hill was 11,437, compared with 1,128 here (in 2002). In dismal 1993 I only recorded 351 butterflies all year. Admittedly, Castle Hill is a Grade 1 SSSI and nothing can match chalk downland for abundance of butterflies. Mixed farmland and a boggy Scottish hillside are not in that league.

Yet the transect has been a constant source of interest. Since it began, Speckled Wood and Ringlet have colonised. Stray females were seen in 1995, and both species are now well established. Maybe it is coincidence, but Meadow Brown and Small Heath numbers have been very low ever since. Might there be some inter-reaction through shared parasitoids? Dark Green Fritillary colonised briefly, but then died out, though two were seen again in 2003. Perhaps it is back. Small Pearl-bordered Fritillary, always in very low numbers, is feared lost. Small Copper and Common Blue are down, as the rough hillside is no longer grazed hard enough by livestock or by rabbits, which themselves are at a low ebb. Scotch Argus, Orange-tip and Green-veined White (easily the commonest species) are thriving.

One surprise is the number of Red Admirals here, far more than I ever saw in Sussex. During 12 years at Castle Hill, their annual index (sum of the weekly transect counts) averaged under 8, and the highest week's

count was only 10. At Culvie Wood, the annual index for the last 13 years has averaged 36 and the best week's count has been 37. For a migrant from the south, this seems incongruous. My guess is that the few immigrants that do reach northern Scotland in early summer breed very successfully, perhaps because their parasitoids are absent. Similarly, 12 Painted Ladies on one count in 2003 easily beating anything at Castle Hill.

Over the 25 years I have done 592 transect counts. On some I have been encumbered by a toddler in a backpack, on others I have struggled round with hamstring and Achilles tendon injuries, or with tubes still dangling from my innards after surgery. I have walked roughly a thousand miles and logged 96,084 butterflies of 32 different species. Surely the novelty wore off long ago? Yet when I play back the tape to transcribe the latest count, there is still that unfeigned note of wonder and delight in my voice as I record the first Orange-tip of a new spring, or a sultry Scotch Argus nectaring on a violet-blue scabious.

Roy Leverton, Whitewells, Ordiquhill,
Cornhill, Banffshire AB45 2HS

Pssst! Want to know a secret?

What is the best present you can give a relative? It lasts a whole year, can be repeated annually, it gives a flavour of warm summer days even in the depths of winter. It can solve one of the most difficult of chores, finding that something special to give at Christmas or for a birthday. The answer is a subscription to Butterfly Conservation. Another useful tip is, give a plant which will benefit our butterflies. Lavender is useful as it also benefits bumblebees particularly the carder bees. Buddleia is great for autumn vanessids and honesty for spring whites but what other plants attract and supply nectar. A little more mundane but no less important are food sources for caterpillars, plant some sacrificial Brussels sprouts which both the Large and Small white like to lay their eggs

on. More colourful and lot more fun are Nasturtiums which the "whites" also like. Surely we can spare them that? If anyone has any plants they would like to recommend please let us know and if you are lucky enough to attract a white to lay on your Brussels could you note the laying date, hatching date and any other important milestones in the insects development as we would love to know how they get on.

Jimmy McKellar



A fresh Painted Lady

A Good Start

I include the following observation simply because I thought it noteworthy: 2003 started with a long dry spell in March which offered good prospects for the coming season. This good spell continued throughout April unfortunately it ended at the beginning of May when the climate turned decidedly cooler. David Barbour noted that up to the end of April we had no fewer than 10 different species on our records, namely: GVW, OT, GH, SC, ST, Pk, PL, RA, PBF, SpW. This was surely one of the best starts to a year we have ever had!

Jimmy McKellar

Argent and Sable

BC(Scotland) and SNH held a joint workshop for the Argent and Sable moth at Flanders Moss near Stirling on August 17, led by Dr. Keith Bland from the National Museum in Scotland. The Argent and Sable is a day-flying moth, under-recorded in Scotland due to a paucity of moth recorders, a generally remote habitat and a need for good weather to survey for adults. However, searching for the characteristic larval 'spinnings' is a reliable and less weather dependant method. The workshop surveyed for the species at Flanders Moss NNR and to train participants to identify larval spinnings. The event was highly successful, with 14 larval spinnings found - the first since 1989 (although this reflects a lack of recording rather than any adverse change in habitat, which probably mirrors the situation for much of Scotland). However in England and Wales, where Argent and Sable feed on young birch, surveys show that the species has declined massively. Butterfly Conservation Scotland welcomes any records of this moth. This moth can also be found in Highland and we are keen to have anyone who can identify the spinnings to send in their records. Please send them to us in Stirling, or contact us for more information.

Julie Stoneman, Volunteer Development Officer, BC(Scotland), Balallan House, Allan Park, STIRLING, FK8 2QG, 01786 447753



A Silver Y at night

Book Review

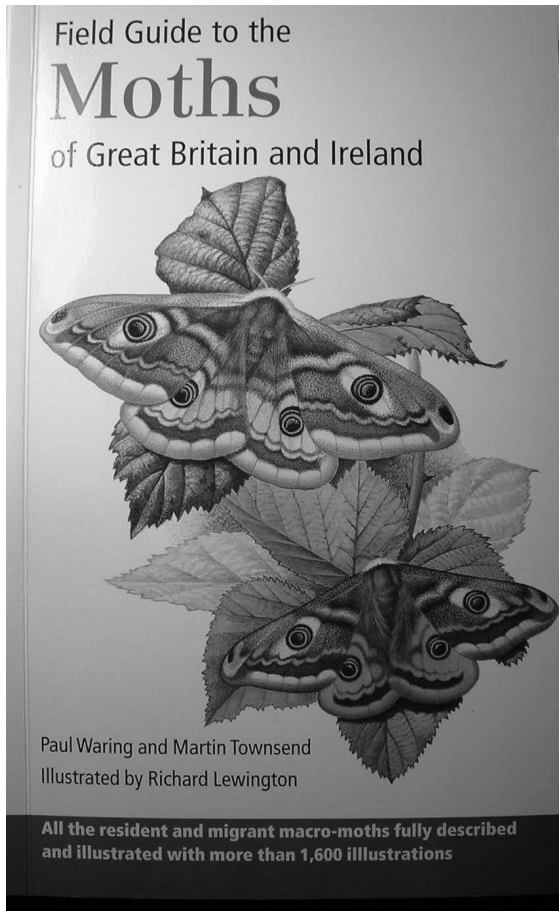
Field Guide to the Moths of Great Britain and Ireland by Paul Waring & Martin Townsend. Illustrated by Richard Lewington. British Wildlife publishing, 2003. 432pp, over 1600 colour illustrations, photographs, text figures, paperback, ISBN 0 9531399 2 1. £29.95. Also in hardback.

It is quite remarkable how literature and identification resources have advanced even in the relatively short time I have been studying moths (since around 1997).

During my tentative forays into the subject during the late 1990s there was only one field guide in print on the adults of the larger British moths and no comprehensive reference on the larvae was available. Study of many of the families of smaller moth was hampered severely by the lack of any illustrated literature at all – either recent or historical.

How times have changed! Skinner's Colour Identification Guide to Moths of the British Isles (1998) is now in its second incarnation, and Porter's 1997 companion volume on caterpillars from the same stable has gone a long way to filling the gaping void in available resources for larval identification. Volume 4 of The Moths of Great Britain and Ireland appeared in 2002 – a long awaited and desperately needed text dealing mainly with the Oecophoridae and Gelechiidae. Hence, perhaps even the most poorly understood (and poorly represented in the literature), unfashionable and difficult British Lepidoptera are served with an authoritative guide to their identification and ecology (where known!). Several continental publishing houses have also produced key texts that will prove of enormous value even to those British lepidopterists that restrict their entomological activities to this country. Even those families not served by an in-print British text have something available in the English language. There are now two titles in print (one treating only the British fauna) dealing more or less exclusively with pugs!

Various Internet resources have evolved illustrating a rich variety of moths photographically – such sites generally depict live specimens in postures adopted when not in flight. Such websites have doubtless been of enormous value to beginners toiling through the serried ranks of set cabinet specimens depicted in the plates of Skinner (or any other key text). The markings just seem to make so much more sense when observed in a live specimen in repose. Moth-ers have never had it so good.



The new book

Waring and Townsend's Field Guide appeared during August of 2003. It endeavours to illustrate all of the larger moths (the so-called 'macro-moths') of Britain and Ireland in a similar manner to the aforementioned websites i.e. in postures adopted while at rest. To quote the authors: "One of the major reasons for embarking on this new field guide is the

difficulty many people have... in identifying a live moth from a photograph or painting of a dead cabinet specimen with its wings spread out".

This guide will inevitably draw comparison with Skinner's book. This is perhaps unfair given that the two texts are quite different but compliment each other well. Indeed my early impression is that most lepidopterists that already own Skinner have added, or will add this title to their library, but will continue to use Skinner as well. However, most practising British lepidopterists would Hoover up any new title on British moths so this fact is not necessarily particularly instructive. As beginners or those on a tight budget (who cannot necessarily commit to spending £70 on both books) may seek to purchase only one of these two in-print guides, it seems appropriate to highlight where the title under review differs from Skinner's volume.

Layout

Following introductory sections discussing the layout of the book, moth anatomy and field methods for finding moths are the species accounts and colour illustrations that comprise the meat of this volume.

Undoubtedly, the main attraction of this new title will be the colour artwork. All of the resident British larger moths and the vast majority of migrants, vagrants and curios are illustrated in full colour, depicted in postures adopted by live moths. Any reader familiar with the plethora of butterfly field guides available will be well acquainted with the paintings of Richard Lewington – overall, the illustrations in this new book will not fall below their high expectations.

The text accounts accompanying the illustrations follows a very similar format to that adopted in the highly celebrated field guide to dragonflies (Brooks & Lewington, 1997) from the same publisher.

The national status/conservation category (based on known 10km square distribution) and distribution summary (abbreviated e.g. N = Northern) along with the Bradley &

Bradley checklist number (followed by the European Checklist number) appear below the species legend before the main species account. The national status category and checklist numbers are not featured in Skinner's book.

This is then followed by the main text for each species and includes sections on field characters, similar species, flight season, life cycle, larval foodplants, habitat and status & distribution. These topics are each discussed at far greater length than in Skinner's text. This is particularly true of the sections on field characters and similar species. In turn, this is particularly useful for the beginner. For example the Dotted Clay, *Xestia baja* is compared directly with three other nondescript noctuids, all of which occur in the Scottish Highlands. Skinner by contrast offers no such comparison for that species. While some 'old hands' may consider some of the species compared to be quite dissimilar, to the novice a trap full of brown noctuids and midges in July can be quite a daunting prospect. Another example might include the Spring-flying *Orthosia* species. Refreshingly, in this group Waring often makes use of characters easily discerned in the antennal structure with a X10 hand lens. It is entirely baffling how few naturalists carry such a useful instrument when out mothing. It is however mildly disappointing that these characters are not illustrated by line drawings alongside the text.

A small number of 'critical species groups' e.g. the November moths are afforded line illustrations of external genitalia characters. Given that this text is quite unapologetically a field guide such characters are only provided for a small number of species that do not require dissection.

Photographic illustrations of larvae appear alongside the species accounts for a limited number of moths. The value of such photographs is perhaps quite limited from an identification point of view, given the small number of species covered, but the frequent use of such photographs can only remind

people that light-trapping is not the only means by which moths can be readily found.

On that note it is a slight disappointment that the larva featured on p44 is not that of the Poplar Lutestring, *Tethea or* but in fact appears to be *Diurnea fagella*, one of the so-called "micros".

Missed opportunities?

Overall, the book is a welcome addition to the growing wealth of identification guides on the British Lepidoptera. Nevertheless, I do have a few frustrating niggles.

1. A representative sample of species is included at the start of each family section. Why? Would readers not have been better served were these illustrative examples included at the very start of the book: representatives of each family shown side by side as a crude visual key? The only recourse of a beginner or casual observer upon finding an unfamiliar moth is to wade through not only the bulk of the plates (, as is the case with Skinner) but also all of the intervening text.

2. Why are the UKBAP Priority Species and Species of Conservation Concern not flagged as such? Doubtless, it was considered that this would 'date' the book unduly as these listings will inevitably be revised as our knowledge accumulates. Surely though, this is equally true of the National status categories used in the book. If nothing else the information could have been included as an appendix or table if not in the main species accounts.

3. Is the use of new 'dumbed down' terminology that instructive? I fully appreciate that the authors have gone to every length to render the study of moths accessible to the layman, but do feel in this instance that they have somewhat over-egged the pudding.

No longer are terms like costa (now "leading edge"), termen (now "outer edge") or dorsum (now "trailing edge") deemed appropriate. Surely anyone coming to the study of moths from some other branch of natural history e.g.

botany or ornithology * can accept that the study of any group of organisms involves the use of associated terminology in anatomical description etc. Such jargon, while initially mildly perplexing is soon readily absorbed. After all, this measure has not obviated the use of jargon, but merely substituted one set of terms with another new set of terms. A new set of terms that sit uneasily with every other book on moths in the British literature.

Further, it might even confuse the novice. Not only will they have to translate terminology back and forth if they also use Skinner, or they have a friend who uses Skinner, but they will inevitably have to embrace the orthodox terms should they wish to look at any of the smaller moths. Anyway, while possibly technically correct in the case of a pinned specimen or a moth in flight the expression "trailing edge" can surely only serve to mislead when looking at a resting noctuid or notodontid. What's wrong with dorsum? Everyone knows where the dorsal fin is on a shark.

* Dragonflies and damselflies are a popular group, and surely provide a stepping stone for many ornithologists into the world of entomology, being large showy insects readily observed in the adult stage with birders kit. Recent field guides on that group made no effort to dispense with terms like costa, pterostigma, frons etc. without ill effect. What is the difference?

4. Some of the more variable species may have been better served with more examples to illustrate the full range of forms. This is perhaps most evident among some of the noctuids e.g. some of the *Euxoa* and *Agrotis* species. The dark, relatively strongly marked specimen of *Apamea furva* figured on p328 seems quite unlike the obscurely marked and tweedy specimens I get in my trap. However, some species are better represented in the new book c.f. Skinner e.g. the Broken-barred Carpet, *Electrophaes corylata*. By the same token I am sure the new book offers a significant improvement on the rather muddy plate in Skinner for those having a tentative first glance at the pugs (although those having

a second glance must surely consider Riley & Prior's 2003 volume dedicated to these species). Swings and roundabouts!

5. The authors claim to show the moths in "their normal resting positions". The definition of "resting" might be more simply described as 'not flying'. Surely in many of the large *Catocalinae* the brightly coloured flashy hindwing markings are only displayed when the moth is quite alert, rather than resting. Similarly many species e.g. The Old Lady, *Mormo maura* (p326) are illustrated with their antennae pointing outwards, whereas if they were truly "resting" they would draw back out of sight. This of course is an entirely pedantic (or even semantic?) point and this small detail does in no way affect the usefulness of the book.

Conclusion

Despite some minor misgivings about certain aspects of the layout and terminology in the new field guide I can quite unreservedly say that anyone with an interest in the larger British moths (the so-called 'macrolepidoptera') should have a copy in their bag when they're out doing fieldwork. I think that most seasoned moth-ers will end up taking a copy of this and Skinner - using the text in this latest fieldguide and the figures from both books. Were I pressed to recommend one of the two books to a beginner it would have to be this one - the text is far more instructive and informative and the paintings are (on the whole) easier to use than the photographic plates in Skinner. This is largely due to the nature of the poses in which the moths are illustrated, and of course, to the skill with which the paintings are executed. In addition many of the species with fugitive colours (particularly any of the green species) are shown in a far better light than could ever be illustrated by photographs of dead cabinet specimens. In addition, this book, being smaller and available in paperback can be far more readily crammed into a small rucksack.

Perhaps the greatest merit of this field guide is not that it might make some larger moths a

little easier to identify or that the text describes the species in more detail than another field guide. No, it is the fact that no other available field guide (including those that are no longer in print) goes such a long way to expressing the great variety in appearance and habit that make moths such an appealing group to go out and look for. Its arrival is quite timely given the significant recent increase in interest in the study and survey of moths (and recent discussions on the feasibility of a national recording scheme covering the moths contained herein). It can only serve to enhance the popularity of moths with field naturalists.

References

Brooks, S. & Lewington, R. 1997. Field Guide to the Dragonflies and Damselflies of Great Britain and Ireland, British Wildlife Publishing, Hampshire.

Riley, A.M. & Prior, G. 2003. British and Irish Pug Moths – a Guide to their Identification. Harley Books, Essex

Skinner, B.1998. The Colour Identification Guide to Moths of the British Isles (2nd edn), Viking, London.

Duncan Williams

Larva

David Stewart found a rather distinctive caterpillar on 22-09-2002 which he gave to me on the same date. I transferred it to a small 50cc jar with a few birch leaves and some potting compost for it to burrow into if it had the inclination. It went into pupation on the weekend of 29/9/02. I can now report that it emerged from pupation 22-05-2003 as a fine example of a Green Silver-lines. It is apparently almost always associated with Oak though on this occasion it was reported as having been taken from beech. I photographed both the caterpillar and imago and safely released the adult afterwards. My

thanks to David for taking the trouble to collect and pass on this caterpillar as I found it a very worthwhile and rewarding exercise.



The larva



The freshly emerged Green Silver-lines

Jimmy McKellar

Butterfly list for RAF Kinloss.

The following information was kindly supplied by Allan Lawrence.

Species, period on the wing, food plant of
Lava.

Speckled Wood late March-September
Grasses

Scotch Argus July and August Purple moor
Grass

Grayling July till early September Grasses

Meadow Brown June till September Grasses (poa spp)

Small Heath May till August Grasses (poa spp)

Pb Fritillary May and June Dog Violet
S.Pb Fritillary June and early July Dog Violet
Dg Fritillary July and August Dog Violet
Red Admiral May till October Stinging Nettle
Painted Lady May till October Thistle and Burdock
Small Tortoiseshell Any time in the year
Stinging Nettle
Peacock Any time in the year Stinging Nettle
Small Blue May and June Kidney Vetch
Common Blue June till September Birdsfoot Trefoil
Small Copper May till September Common Sorrel
Green Hairstreak May and June Gorse and various others
Large White May till September cruciferous plants
Green veined White April-June, July-September Charlock mustard
Orange Tip May and June cruciferous plants/cuckoo flower
Dingy Skipper May and June Birdsfoot trefoil

Butterfly mapping

Butterfly mapping in Caithness and Sutherland

During 2003 we helped fund recording in what has become known as the "white holes of Caithness and Sutherland". These are areas where little, if any, recording has been carried out. We can do no better than to refer to Gill's own article for details on progress. Here it is:

Butterfly Mapping in the North

The main aims were: to monitor the *Small Blue* colony at Dunnet and identify other suitable sites; to visit 10 km squares with no records of the *Large Heath*; to look for suitable habitat for other priority species; distribution mapping of all Lepidoptera encountered.

Several visits were made to Caithness and Sutherland during June, July and August,

taking advantage of the fine weather and to include the flight periods of as many species as possible. Additional records were also included from visits to the area for bumblebee mapping. A total of 76 10km squares were visited and Lepidoptera were recorded in 62 squares.

All sites in Caithness with recent records of the Small Blue were visited at the end of June. The main site at Dunnet Links was surveyed and a timed count made. Other coastal areas with stabilised dunes along the N and NE coasts were also visited to assess their suitability as potential Small Blue sites, but no Small Blues were seen at any other site. The colony at Dunnet is therefore a very important site for this species, the most northerly in the UK.

The Highlands probably hold more than 20% of the UK population of the Large Heath. It is fairly widespread, inhabiting wet moorland, but there are still blank squares on the distribution map in Caithness and Sutherland. 18 of these squares were visited during 2 visits in July and 6 new records were made for this species.

The Small Pearl-bordered Fritillary is recorded from only 2 10km squares in Caithness and is probably under recorded. Suitable habitat was visited in sites adjacent to 10 km squares with recent records of this species. Small pearl-bordered Fritillary were only seen in NC23 near Kylesku, Sutherland.

The most widespread butterflies encountered were the Meadow Brown and the Red Admiral. A number of these records are new since The Millennium Atlas for Butterflies or confirm pre-1982 records:

Two new squares were recorded for Common Blue, 5 for Dark Green Fritillary, 2 for Green-veined White and Small Heath, 6 for Large Heath, 1 for Large White and Small Pearl-bordered Fritillary, 7 for Meadow Brown and Painted Lady, 10 for Red Admiral, and 4 for Small Tortoiseshell.

During June, Painted Ladies and Red Admirals were particularly widespread, especially along the north coast and were recorded from Cape Wrath in the west to Duncansby Head in the east.

In the Millennium Atlas there were 4 10km squares with no records of any butterflies: NC34, NC35, NC43, ND03. These squares were visited, with Large Heath being recorded from NC35 and Green-veined White, Large White, Meadow Brown and Small Tortoiseshell from ND03.

The fine warm summer of 2003 was a very good one for butterflies. Most species emerged earlier than usual and there were exceptional numbers of migrants in the far north.

Gill Nesbit



Loch Killin at the start of the "Empty Quarter"

Butterfly Conservation's Mission

Mission statements tend to evolve over time and just in case you cannot remember where we have got to I thought I would include our mission statement: "The conservation of butterflies, moths and their habitats."

Chequered Skipper

Surveys at Allt Mhuic Nature Reserve.

The Chequered Skipper is Scotland's most exclusive butterfly, found within a 30km

radius of Fort William having become extinct in England in the 1970s. It's very active, males are very territorial and have a swift darting flight, females are more elusive. Identifying breeding sites by observing egg-laying is difficult, especially given the inclement climate of the area. An alternative is to look for caterpillars and their characteristic "double notch" feeding damage on their sole food plant (purple moor grass) in late September and October. BC Scotland held two one-day workshops on 28 and 29 September to train volunteers and staff at their new (and only) Nature Reserve at Allt Mhuic on the north shore of Loch Arkaig in Lochaber. The aim of the day was to survey the site and encourage participants to look for larvae in suitable habitat at other sites, with the information helping BC Scotland and Forestry Commission Scotland (who manage the site in partnership) to target management to benefit this species more effectively.

Alex Stewart and I went on the first of these trips and found it very worthwhile. Not only did everyone find a caterpillar and can now identify the typical feeding notches on the grass blades but we all enjoyed the day out.



Feeding notches clearly visible

The following extract comes from the advertisement for the larval days and was written by Tom Prescott:

Background information

The Chequered Skipper is an enigmatic and elusive species that is on the wing from mid-May until the end of June. Its entire UK distribution is centred on Fort William with boundaries at Loch Arkaig in the north; Glen Spean in the east, around Loch Creran to Loch Etive to the south; and west along Loch Sunart to Ardnamurchan and Moidart.

It is a very active insect that seems to require large quantities of nectar. Males are highly territorial and competitive, intercepting intruders with swift darting flight should they enter their territory. Females are more elusive and identifying breeding sites by observing egg laying is particularly difficult. Surveying and monitoring adults can therefore be very frustrating as well as being very weather dependant. However the caterpillar stage lasts almost ten months, from July through until April and provides an alternative and additional way of recording this elusive priority species.

Locating caterpillars will also enable the breeding sites to be accurately identified which in turn will improve our knowledge of their habitat requirements and thus help determine sympathetic management. As we gain more experience of finding caterpillars in the field larval searches may become a better technique for monitoring Chequered Skipper populations than by counting adults.

Jimmy McKellar

National Moth Night 2004

The date has already been set, so open your diaries and put it in now!! It's.....

Saturday 22nd May

So for the second consecutive year it is a good date for moth-ers in Scotland as it coincides with the flight period of a number of our priority species. We are also hoping to break with tradition as in all previous years National Moth Night has been just that, a night. This year we are including day-flying moths too. So there is even more reason for people to get involved.

The priority species we intend to target are Netted Mountain Moth, Narrow-bordered Bee Hawk Moth and Argent & Sable, though it may be a little too early in the season for the latter. Anything that you could do to help promote the night and the event will be gratefully received.

Although details of this event have yet to be finalised the locality for our moth night should be Gearrhoille Community Wood, Ardgay, NH601899, (VC106). It does indeed sit right on the intersection of four 10km squares.

In spite of the fact that the site is not large or particularly spectacular it does contain a significant component of old Oaks, and also quite a bit of Aspen, Birch, Sallow etc. Given that the site is not particularly far from either Spinningdale or the valleys of the Oykel and Shin it should contain several of the more interesting species associated with those areas. National Moth Night is in late May, so species like the Lead-coloured Drab, Seraphim and Green Silver-lines are reasonable possibilities, as are many pretty though common species.

Duncan William/Jimmy McKellar

A Quantum Leap?

John Randall sent the following email out on 27 August 2003

When I was in Lewis earlier this month (11 August to be precise), I was pleased and surprised to see a Speckled Wood in the Stornoway Woods very near the footbridge into the town at NB424334. The weather was very warm and sunny, and I got an excellent view of the butterfly (just one).

I note that it was not recorded in Lewis in the Millennium Atlas, nor in the provisional atlas published by Highland Branch in 1998. Nor does Lewis appear to have been a traditional site of this butterfly according to George

Thomson - cf recent comments in the Oban Times featuring Tom about the recent spread of the Speckled Wood to former haunts.

I'd be interested in any comments about whether this butterfly has been recorded in Lewis before, and how it reached the island (under its own steam or courtesy of CalMac?!). The Stornoway Woods - originally planted by James Matheson in the 19th century - provide just about the only suitable habitat in the whole of the Western Isles, so I don't imagine it will spread very far from there!

Judging by Johns comments it is a truly remarkable record, time will tell if it can survive and thrive. We are keen to hear from anyone who visits Lewis in 2004 as to how they are getting on.

The following note gives an overview of its status:

The Speckled Wood (*Pararge aegeria*) is recovering from a low-point in the early 20th century, when its Scottish distribution was limited to a small area of the Argyll coast. In recent decades it has spread in the west and also around Inverness. Although has been recorded recently on Skye, there were no known records from the Outer Hebrides before this August! The Speckled Wood is aptly named, as its preferred habitat is the dappled shade of woodlands. Its caterpillars feed on various tall grasses such as False Brome, Cock's-foot and Yorkshire-fog.

Jimmy McKellar

National Moth Night - Glen Affric 12 April

The fifth National Moth Night was scheduled this year for 12 April - an early date for us in the far north, so we had to pray that the Spring weather would be kind to us on the

night. For location we chose Glen Affric National Nature Reserve, a rich area that we had visited a couple of times already in our daytime excursions. The 'target species' suggested by the scheme organizers include Sword Grass and Barred Toothstriped, and the first of these at least seemed a likely prospect at Glen Affric. In addition we hoped to confirm the presence of Rannoch Sprawler, a birchwood rarity which had been found there as long ago as 1955.

On the evening of the 12th we assembled at the chosen spot - open woodland with some really venerable old birch trees on the north side of Loch Beinn a' Mheadhoin. The omens were good: weather was quite mild and we started to find some of the Spring geometrids (Early Toothstriped, Engrailed Moth) at rest on tree-trunks and posts. Attendance was impressively large, boosted by enthusiasts from the Highland Biological Recording Group and a party of six on a weekend outing from the Elmwood horticultural college at Cupar, Fife. Also with us was Alan Watson Featherstone of 'Trees For Life' a conservation charity which has done a lot of practical work to benefit the native woodlands in Affric. We were armed with 2 Skinner and 1 Robinson light-traps, and sugar and wine-ropes to attract the less light-susceptible species.

Darkness didn't really start to fall until after 9.30. Soon afterwards the first geometrids started to appear, and then the common Spring noctuids, Hebrew Character, Clouded Drab and Common Quaker.

Sugar and wine-ropes produced Chestnut and Red Sword-grass (at least 3 individuals, though the hoped-for 'plain' Sword-grass never appeared). A moth fluttering round the periphery of the light-circle was netted and to our great surprise, was identified as a Barred UMBER, a hazel-feeding species which normally wouldn't be on the wing before mid-May. Another finding which was exceptionally early for these parts was Scalloped Hook-tip, a single in the Robinson trap.

Just as things were getting interesting, sadly our Elmwood companions had to leave. They had booked in to the local Youth Hostel, which had a strict curfew time of 10.30. Further new species continued to appear until after midnight: the Scarce Prominent, a birchwood specialist not all that scarce in the Highlands, and the Pine Beauty, a pest species all too common in forestry plantations. We chalked up 20 species, and considered that a very good total for a night in early Spring.

However, the big excitement of the evening was kept until last. At 12.30, on the last check of the traps before packing up, we saw among the egg-boxes a fine male Rannoch Sprawler! This set the seal on an extremely productive and enjoyable night's trapping, giving just a taste of the wealth of species to be found in this wonderfully unspoiled area of Caledonian Forest.

David Barbour

Field trips Roundup 2003

This year we arranged four field trips and each was a success in its own way. Unfortunately not all in the butterfly sense but such is the way with field trips.

The first was planned as a moth night early in April in Glen Affric. I was unable to attend but David Barbour led the event and it turned out to be very successful. See David's article for details.

Our second trip took us to Beaully/Muir of Ord Area where we hoped to find Dingy Skipper and Narrow-bordered Bee Hawk-moth. Unfortunately the topography seems to have changed and the area looks unlikely to be used any more, the trees have encroached and the grass areas are now just too small.



Our party at Muir of Ord

Next we went to the Findhorn dunes which were wonderful, I was amazed at the expanse of the area and we only covered a little part of it.



Some serious study at Findhorn

Our final trip was poorly attended but turned out to be one of the best of the year, sadly not for butterflies but for bees. This one found us starting at Loch Tarff for the South Loch Ness square bashing exercise. The emphasis was certainly on exercise! We searched around the starting point before making our way to Loch Killin for a concerted effort at our now infamous "Empty Quarter" Lots of bees but the only butterfly we saw was speeding out of the square as fast as it could go.



The Empty Quarter

Report from the West Coast 2003

2003 has been a memorable year on the butterfly and moth front and it is hard to know where to start. On a personal level the most significant event was the acquisition of a Robinson trap in August. Although I had managed to record more than 160 species of macro moth without the use of a trap, a visit by David Barbour on 7th June along with his Robinson trap was sufficient to show me what I was missing. On just the one night we recorded four species new to the garden and three species recorded only once in the previous seven years. None of these were uncommon species but included such attractive moths as Poplar Hawk-moth, Buff-tip, Buff Ermine, Peacock Moth, Small Angle Shades and Beautiful Golden Y. The last named moth was out and about rather early for northern Britain. During the day we had failed to find Argent and Sable, one of our target species, and David had just a brief glimpse of a Narrow-bordered Bee Hawk-moth, which unfortunately hadn't come close enough to be netted. However we did see a Silver Hook, a local species occurring in western and south-west Scotland. It is one of those strange tiny noctuids belonging to the Eustrotiinae family. Other day-flying or easily disturbed moths included Clouded Border, Clouded Buff, Bordered White and Peacock Moth. Although rather breezy, the day also produced several Green-veined

White, a Green Hairstreak, Small Pearl-bordered Fritillary and a Painted Lady.

On a national level the year was outstanding for the exceptional early appearance of many butterflies and moths. My own observations include record early dates for 8 butterflies and 38 moths. Some of these are weeks ahead of my previous earliest records. What were thought to be very early dates in 2002 already pale into insignificance just a year later.

BUTTERFLIES

Unfortunately I was away from 3rd until 19th April so missed the beginning of the butterfly season. Amongst the extraordinary sightings in Lochalsh during this fortnight were Orange-tip on 9th April, Green Hairstreak on 16th April and Speckled Wood on 15th April. Prior to that a Red Admiral had been seen on 18th March, presumably having successfully hibernated locally. All of these were seen in the garden of Rowena and Kenneth Oliver at Allt-nan-sugh on the shore of Loch Long. During this same two week period Eleanor and Hubert Hunton also saw an exceptionally early Orange-tip at Balmacara on 15th April and Gill Nisbet saw early Green-veined White (19th April), Orange-tip (20th April) and Green Hairstreak (19th April) whilst visiting the Morvich and Killilan areas. On returning home I was still able to record personal earliest dates for Green-veined White, Orange-tip, Green Hairstreak, Pearl-bordered Fritillary and Speckled Wood before the weather deteriorated on 25th April and butterfly activity ceased until 2nd May. There were about 30 Green Hairstreak on Carr Brae on 24th April but unusually few were seen subsequently. It was a good year for Pearl-bordered Fritillary with no less than 20 located on Carr Brae on 24th April. I at last managed to obtain good photographs of this BAP priority species including one in our garden on 2nd May. My first Peacock butterfly for Lochalsh appeared in our garden on 20th April and others were seen at Allt-nan-sugh on 19th and in Glen Elchaig on 21st. No doubt these resulted from the influx

into the Moray Firth area the previous autumn.

Unsettled weather became the norm during May and June and butterfly activity was restricted to brief sunny spells. The first 6 Small Pearl-bordered Fritillaries were seen on 31st May and for the first time I saw Pearl-bordered and Small Pearl-bordered on the same day. By this time the Pearl-bordered were looking the worse for wear in contrast to the pristine condition of the newly emerged Small Pearl-bordered. An exceptionally early Dark Green Fritillary actually overlapped with the last two Pearl-bordered Fritillaries on 9th June. As in 2002 Common Blue and Meadow Brown flight periods again coincided with the worst spell of weather, resulting in relatively few records. However large numbers of Meadow Brown were seen on Raasay during a South West Ross Field Club outing on 19th July. This visit also produced interesting sightings of Dark Green Fritillary and Speckled Wood on the island.

It was the best year since 1996 for Painted Lady with a small influx in June and July and a more prolonged and numerous influx in September and October. There was a report of "hundreds" on the fruit on a greengage tree at Ratagan but my best total was a modest 4 on marjoram in our garden on 20th September. Red Admirals followed a similar pattern but with one or two reported lingering into November.

It was an exceptional year for Scotch Argus. Following on from the first in our garden on 18th July huge numbers could be seen almost everywhere from sea level to over 900metres along the South Shiel ridge on 5th August. My last was in Gleann Beag on 28th August. Having obtained two small buddleia plants this year it was unexpected that the only butterfly to be seen nectaring on them in their first year was a Scotch Argus. At last I recorded Speckled Wood in October but only on the first of the month as the weather deteriorated on the 2nd and only Red Admiral and Painted Lady were seen subsequently.

MOTHS

January followed the familiar pattern of recent years. For the third year running Mottled Umber remained into the New Year peaking at 6 on 9th January with the last one on the 21st. Winter Moths peaked with a remarkable 50 on the windows on 12th following a similar number on 28th December.

27th February gave the first indication of things to come when Yellow Horned, Red-green Carpet and Common Quaker all appeared in February for the first time.

March produced twice as many moth records as in any previous year but Double-striped Pug was the only new species for the month. 15 species were recorded including good numbers of Small Quaker. 22 species were recorded in April despite me being away for two weeks, and again I had far more moth sightings than in any previous year. These included 7 species not recorded as early as April before: Small Phoenix, May Highflyer, Foxglove Pug, Barred Umber, Pebble Prominent, Knot Grass and Nut-tree Tussock. These were all well ahead of the flight period given for northern Britain in Waring and Townsend. The month also produced the first March Moth to be seen as late as April (on the 2nd).

May saw the beginning of another good year for Yellow-ringed Carpet with 6 sightings between 17th and 28th. Common Marbled Carpet and Green Carpet were the exceptionally early moths to appear this month, on 30th and 27th respectively. Clouded-bordered Brindle was the third new species for the month but was perhaps a more likely occurrence than the two carpets. June began with a large female Northern Eggar attracted to the windows. These moths were numerous on local moorland throughout the month. Male Drinkers were attracted to the windows on 10 dates from 13th onwards, the most being 3 on 28th when a female was also present. July-August is given as the flight season in Waring and Townsend, so 13th June was yet another very early date. 22 species

were attracted to the windows during June whilst David Barbour's Robinson trap added a further 11 species on 7th June.

40 species were recorded in July including 3 new moths – Beautiful Carpet, Pretty Pinion and Small Dotted Buff. Triple-spotted Clay was the most numerous moth during July. August saw the arrival of the Robinson trap and I ran it for the first time on the night of 3rd/4th. It was a daunting experience and on reflection perhaps August was not the ideal month to start when moth numbers are at their peak. In particular the number of plain brown noctuids was rather disconcerting. Should I waste time trying to identify these apparently featureless moths or press on with those where I was in with a chance? In the event I didn't identify anything unusual in this first catch but it did include a splendid Garden Tiger and my first Swallow Prominent, a very smart-looking moth. The bulk of the catch consisted of Common and Dark Marbled Carpets, Common Carpets, Large and Lesser Yellow Underwings, Triple-spotted Clays, True Lover's Knots, Dark Arches and Common Rustics. During the rest of August I ran the trap three more times and this boosted the total for the month to 61 species, including 17 new species for August, making an overall total of 86 for this month. The most interesting species was a Plain Clay on 16th/17th. Despite its name this is a distinctively marked moth. It has Nationally Scarce B status and occurs mainly in central and eastern Scotland. This was probably the most north-westerly record in Britain to date although Stephen Moran tells me that it does occur in the Inverness area. It was my best year so far for Beech-green Carpet, which was recorded from 20th July to 5th September. Interestingly all of these were attracted to the windows, none to the Robinson trap.

A Pine Carpet on 19th September was, surprisingly, a new species. Waring and Townsend describe it as "well distributed and often abundant in areas of native and planted pine forest".



Beautiful Carpet

Although Grey Pine Carpet is frequent here this was my first Pine Carpet. Dark Sword-grass and Broad-bordered Yellow Underwing were other new additions to the list. September also saw the arrival of several autumn species including the attractive Green-brindled Crescent and Merveille du Jour. The dreaded Epirrita moths were out in force from 3rd October peaking at 41 at the windows on 31st October. Both November and Autumnal Moths were identified but Pale November has yet to be confirmed. Epirrita moths continued throughout November in smaller numbers and Autumnal Moth was recorded in December for the first time on 4th. One of the most unexpected species in October was Green Carpet. One was trapped on 13th/14th and was followed by two worn specimens at the windows on 15th, perhaps suggesting an unlikely second generation at this latitude. Yellow-ringed Carpet also had an extended season being seen in both October and November for the first time with the last one on 12th November. This also suggests a later generation than usual, possibly a third. A Snout on 2nd October was another late occurrence. The first December Moth was attracted to the windows on 10th November but a good trapping night on 2nd/3rd December produced a staggering 60 December Moths. There was also a late Grey Pine Carpet and 3 late Yellow-line Quakers as well as 21 Mottled Umber, 5 Scarce Umber, 2 Northern Winter Moths and an Angle Shades; an impressive 93 moths in total. A Pale Brindled Beauty on 17th December was another unexpected occurrence, being more

than five weeks earlier than my previous earliest on 23rd January 1996.

Away from the garden, Magpie moths were abundant in the second half of June and throughout July.

I had only 3 sightings of Six-spot Burnet between 25th June and 2nd July and only one sighting of Chimney Sweeper on 30th June (c.20 at a regular site at Nostie). There were two influxes of Silver Y in June and September, presumably associated with the movements of migrant butterflies. A few Convolvulus Hawk-moths were seen in Lochcarron and Skye but, surprisingly, I didn't hear of any in Lochalsh. Disappointingly I haven't heard of any Hummingbird Hawk-moths in the area despite the record numbers further south. However a dead Death's Head Hawk-moth was found on Skye.

One of the most interesting sightings involved 170 Drinker larvae counted along a 550metre stretch of footpath in the glen of An Leth-allt near Inverinate on 11th October.

At the time of writing the total numbers of macro moths recorded in each month are as follows:

January	5
February	9
March	18
April	30
May	46
June	57 (8)
July	72
August	86 (13)
September	58 (5)
October	35 (4)
November	18
December	8



Swallow Prominent

The figures in brackets indicate the number of species added this year after being caught in the Robinson trap. All others were either attracted to windows or are day-flying species.

On the whole 2003 was a year of consolidation, adding a good number of widespread species that had eluded me previously. Amongst those not already mentioned were Small Autumnal Moth, Brown Rustic, Neglected Rustic, Rosy Rustic, The Crescent and Burnished Brass. Fewer nationally scarce moths were recorded than in 2002 even though moth totals were much higher. Amongst the moths which trapping proved to be far more numerous than I had anticipated were Large Yellow Underwing, Black Rustic, Merveille du Jour, Yellow-line Quaker and Small Wainscot.

I am hoping for great things in the spring. Scarce Prominent, Brindled Ochre and The Coronet were all recorded in 1996, Brindled Ochre also in 1997, but not since. I am hoping that the Robinson trap will establish whether they are still present as well as add more species to the Lochalsh checklist.

Brian Neath

List of abbreviations

Acronyms have an embarrassing way of sneaking up on you when you have a senior moment and blank... You cannot remember what they stand for. To spare you some blushes here are few I picked up on recently

which will stand you in good stead for those “moments”.

BAP – UK Biodiversity Action Plan
BC – Butterfly Conservation
BTO – British Trust for Ornithology
CAP – Common Agricultural Policy
CEH – Centre for Ecology and Hydrology
CEO – Chief Executive Officer
DEFRA – Department for Environment, Food and Rural Affairs
EN – English Nature
FWAG – Farming and Wildlife Advisory Group
FC – Forestry Commission
FE – Forest Enterprise
GBC – Garden Butterflies Count
HAP – Habitat Action Plan
HR – Human Resources
IT – Information Technology
LA – Local Authority
LBAP – Local Biodiversity Action Plan
LEAF – Linking Environment Agriculture and Farming
NMMRS – National Macro-Moth Recording Scheme

Garden Butterfly Count?

Have you signed up for “Garden Butterfly Count”? I expect you all know what it is but not many of us actually signed up. The whole scheme seems to have been a huge success but a victim of this very success. Too many people subscribed! Still it shows there is substantial interest which is all good for butterflies. So what are the top 5 butterflies? Surprisingly not the ones we see up here as the bias it towards the south. Well there are more people in England and the first cut off point for many species it around London closely followed by the second around the Scottish/English border. They five are: Large White, Small White, Red Admiral, Peacock and Small Tortoiseshell. At a guess ours would be Small Tortoiseshell, Green-veined White, Red Admiral, Speckled Wood and Painted Lady. Now the question is am I right? Would any of our members like to prove me right, or wrong, and produce a

Highland butterfly count based on fact rather than guess work? We would like to hear from you.

Jimmy McKellar

Insect Wings

I came across this snippet somewhere on the WWW and decided to include it as it gives some interesting insight into flight in insects. I cannot comment on the accuracy of all the information contained herein but I have corrected what I can. It was obviously of American origin by the spelling and there was some strange grammar. I would now like to take full responsibility for any errors of this nature. The article:

The insect wing is said to be a unique organ of flight. The insects are the only animals that have wings originally evolved for flight, since bird and bat wings are only modifications of pre-existing limbs. Their wings are believed to have originated as flat expansions of the sides of the thoracic segments. They were probably useful in gliding. Full sized and functional wings occur only in adult insects with the exception of the Mayflies. However, developing wings may have been seen as small, fleshy pads on the thorax of immature insects called nymphs in the Exopterygota and the pupae of the Endopterygota

On each wing, there are thickened lines and ridges called veins. The areas of the wing membrane between the veins are called cells. Wings are important in identifying and classifying insects as there is no other set of structures in studying insects more significant. Each order and insect family has distinctive wing shapes and features. In many cases, even species may be distinguished from each other by differences of color and pattern on the wings.

Most insects fold their wings when at rest, but Dragonflies and some Damselflies rest with

their wings spread out horizontally. Some insects such as the Caddisflies, Stoneflies, Alder Flies, Lacewings and some moths hold their wings sloped roof-like over their backs. A few moths wrap their wings around their bodies. Many flies and most butterflies close their wings together straight upward over the back.

Many insects can hover in one place as a helicopter does. Some expert insect fliers that often hover in one position such as Dragonflies, Sphinx Moths, Beeflies, and Hoverflies. Wasps and Bees often hover as well when seeking prey or in front of a flower. These same insects can even fly backwards for short distances.

Many times the shape of the wings correlate with the type of flight an insect takes. The best flying insects tend to have long slender wings. In many of the Sphinx Moths, the fore wings are large and sharply pointed, forming with the small hind wings a triangle that is suggestive of the wings of fast, modern airplanes.

Actually a more important correlation is the great power and size of the flight muscles.

In the powerfully flying insects, the wings are most beautifully adapted for the stresses and aerodynamics of flight. The veins are thicker, stronger, and closer together toward the front edge (called the "leading edge") and thinner yet flexible toward the rear edge (called the "trailing edge"). This makes the insect wing an excellently constructed "aerofoil" capable of exerting both "propulsion" and "lift" while minimizing "drag".

Laboratory experiments show that not only does the wing beat vary in different species but can vary in one individual insect at different times - much like people! In general, the frequency is dependant upon the ratio between the power of the wing muscles and the "resistance" (weight) of the load. Large winged, light bodied butterflies may have a wing beat frequency of 4-20 per second whereas small-winged, heavy-bodied flies and bees beat their wings more than a

100 times a second and even mosquitoes can beat up to 988-1046 times a second. The table shows a list of wing beats per second:

Honeybee	250 bps
Housefly	190 bps
Bumblebee	130 bps
Hoverfly	120 bps
Hornet	100 bps
Horsefly	96 bps
Hummingbird Hawk Moth	85 bps
Aeschnid Dragonfly	38 bps
Scorpion Fly	28 bps
Damselfly	16 bps
Large White Butterfly	12 bps

Many have speculated about the speed of an insect's flight and thus many tall tales have been told and retold. It is generally difficult to estimate the speed of insects in flight, but there is little doubt that in nature, most insects can go faster than controlled experiments. Such as the Dragonflies possibly making 33 miles per hour. The figures that are now most widely accepted for their speed under controlled circumstances are in the following table, in miles per hour:

Aeschnid Dragonfly	15.6 mph
Hornet	12.8 mph
Hummingbird Hawk Moth	11.1 mph
Horsefly	8.8 mph
Syrphid Fly	7.8 mph
Bumblebee	6.4 mph
Honeybee	5.7 mph
Housefly	4.4 mph
Damselfly	3.3 mph
Scorpion Fly	1.1 mph

With all this high speed business of being a flying insect, people may have wondered if insects ever get tired. They do but they demonstrate a terrific resistance to fatigue. A Drosophila Fly has been known to fly

continuously for 6.5 hours and a *Schistocerca* Locust for 9 hours. Wing muscles have made more than one million successive beats before tiring yet in contrast, the worker Honeybee may tire after 15 minutes of flying.

Purpose of Flight in Insects

Besides the need to search for food or a resting habitat, there are other purposes for insects to remain in flight. With wings, insects were able to spread over the globe; if conditions became unfavorable in one place, they simply took to the air to find another. Flight has given them an advantage over land-bound animals in being able to forage widely for food, make good their escape from enemies and search actively for mates.

Some are very unique from other species or members in their order. Take for example, the Drones (the males of the Honeybees) whose only duty is to fertilize the queens when they are aloft in the marriage flight. After performing this one task they die, their genital organs having been left in the body of the females. Many swarms of social insects are mating swarms. Only the ants, among the social Hymenoptera, mate during swarming flight. Their flights may consist of hundreds or thousands of males and females. Termites have similar flights during which males and females pair off and begin new colonies.

Many insects use their sense of feeling warm temperatures to assist themselves in flight. A moth usually goes through a remarkable ritual before taking to the air. It beats its wings so rapidly that they blur like the whirling of propellers of an airplane. Suddenly, after several minutes, it takes off. If a moth is captured before it has completed the ritual and then dropped, it is unable to fly but falls to the ground instead. Obviously, the moth generates heat through the flexing of its flight muscles. If a moth is kept in a heated cage, it does not need to rev up its motor but instead can take flight immediately. For this system to work, the moth should possess a mechanism for gauging temperature, but scientists do not as yet know where these heat-sensitive cells are located.

Many insects rely upon the direction of the sun's rays as a sort of compass. This can be easily demonstrated by a simple experiment. Place a light-tight box over an ant carrying food back to its nest and keep it imprisoned for a few hours. When the box is removed, the ant will not continue on its former course, but will start off rapidly in a new direction. This new route will differ from the old by exactly the angle that the sun has shifted across the sky during the time the ant was imprisoned.

Anonymous (Amended by Jimmy McKellar)

Papilionaceous

(puh-pil-ee-uh-NAY-shuhs) adjective

1. Of or pertaining to a butterfly.
2. Belonging to the Papilionaceae family whose plants have petals in the form of a butterfly, mostly legumes, such as peas and beans.

[From Latin papilion-, stem of papilio (butterfly).]

When you're sitting in a pavilion, you're under the wings of a butterfly, etymologically speaking. Also, there is a breed of spaniels named papillon

Lepidopterists Lament

I was summonsed to see a large moth which had been found in a couple's garden on the 17th June this year (2003). Taking my daughter for company we turned up to be welcomed. "Hello moth man" and we were ushered through the bungalow to the rear of the house which had a super view over the city of Inverness to Tomnahurich Hill. The moth was taken from a large box in the shed, I recognised it immediately but not wanting to appear too dismissive or knowledgeable I rifled through my now tattered copy of Skinner till I got to the appropriate page and

asked if that was it. Yes! A Poplar Hawk-moth and a very nice one it was too. I suggested we let it go as it was obviously keen and had started to vibrate its wings to warm up in preparation for take off. So I carefully placed it on the branch of a plant growing up a post. When I had finished the gentleman called me to the back of the shed to see where it had been found. While we were out of sight I heard his wife sheik "it's taken off it's been eaten by a bird"! Oh, the indignity, a sparrow had nabbed it as it took off. Fortunately the couple saw the funny side of it, as did their neighbour. We left rather sheepishly to brush up on our diplomatic skills.

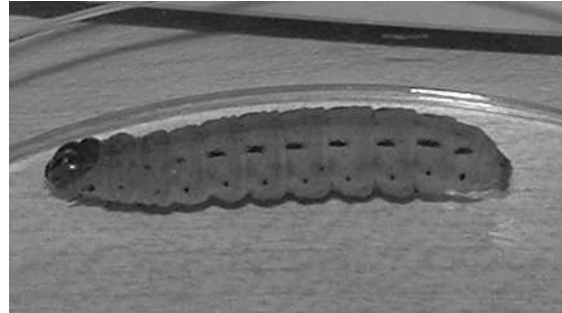


The hapless moth moments before its demise.

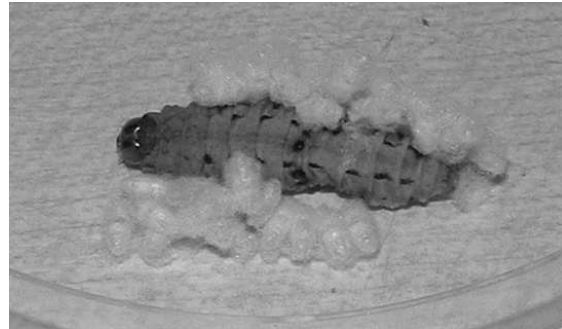
Jimmy McKellar

Parasites

I noticed the caterpillar in this next photograph behaving oddly and exhibiting the classic characteristic of being restless and wanting to climb. I have seen this behaviour before and suspected it may be parasitised. While in captivity during the period 18 April to 19 April 2003 a large number of parasites emerged as can be seen in the second photograph. These parasites have been identified as *Glyptapanteles fulvipes*, a parasitic wasp.



Before



After

Not a nice end for the Large Yellow Underwing but a very interesting event none the less.

Jimmy McKellar

RECORDING MATTERS

The 'Butterflies for the New Millennium' project still goes on after the production of its landmark Millennium Atlas. The plan is to repeat the mapping of all species in the 5-year period 2000-2004. This is well under way, and an interim map-set was recently circulated to show progress. Still there is much ground to cover in the Highlands (particularly in the North and West). Some species are particularly poorly recorded in the current period, including two Action Plan species the Large Heath and Pearl-bordered Fritillary.

To encourage wider recording in 2004 the last year of this recording cycle, Highland Branch is again offering travelling expenses to any member willing to make a butterfly-recording trip to the more remote areas. These will be made available at the discretion of the

Chairman at the rate of £20 per night plus 25p per mile. Applications to Jimmy ASAP please - we hope there will be a number of takers!

David Barbour

Un Cri de Coeur

Records please! If you have already sent your records please ignore this plea. As always we need your butterfly and moth records and the sooner the better if you can manage it. We are also keen to hear from anyone who thinks they might like to be on our committee. It is not a terribly onerous task with only a few meetings a year. For anyone who does not know what is involved, it is would be your chance to speak up and tell us what you think. We will give you all the support and advice you need to make you feel part of our branch. Just give the chairman a ring and see what happens.

Jimmy McKellar

Lyme Disease

During my time in Highland I have known at least 2 people who have developed symptoms of tick born disease, because of this I am always aware, though not overly concerned, of ticks, so with this in mind I thought it wise to include a couple of pages of information. I hope you find them interesting and informative.
